

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): A door handle device that is able to open a lock of a door locking means, which is provided to a door with a handle used for an opening/closing operation to lock an opening operation of the door, by an operation of the handle, comprising:

a piezoelectric sensor formed of a piezoelectric element fitted to the handle and having a flexibility; and a controlling portion for receiving a sensed signal of the piezoelectric sensor generated by a touch on the handle to open the lock of the door locking means.

Claim 2 (original): A door handle device according to claim 1, wherein the handle has a handle main body one end side of which is supported swingably to the door via a supporting shaft and other end side of which is moved in a pulling-out direction by a swing of one end side, and the piezoelectric sensor is arranged on a surface of the handle main body opposing to the door to sense a vibration generated by a gripping operation of the handle main body.

Claim 3 (original): A door handle device according to claim 1, wherein the handle has a handle main body one end

side of which is supported swingably to the door via a supporting shaft and other end side of which is moved in a pulling-out direction by a swing of one end side, and the piezoelectric sensor is bridged between the door and other end side of the handle main body to sense a vibration generated by a pulling operation of the handle main body.

Claim 4 (original): A door handle device according to claim 1, wherein the handle has a handle main body one end side of which is supported swingably to the door via a supporting shaft and other end side of which is moved in a pulling-out direction by a swing of one end side, and the piezoelectric sensor is arranged in vicinity of the supporting shaft of the handle main body to sense a vibration generated by a swing operation of the handle main body.

Claim 5 (original): A door handle device according to claim 1, wherein the handle has a handle main body one end side of which is supported swingably to the door via a supporting shaft and other end side of which is moved in a pulling-out direction by a swing of one end side, and

the piezoelectric sensor is bridges between the door and one end side of the handle main body to contact the supporting shaft and a top end of the piezoelectric sensor

is inserted into an insertion hole formed in the handle main body as a free end.

Claim 6 (original): A door handle device according to claim 1, wherein the handle is a door-integrated handle having a handle main body both ends of which are fixed to the door.

Claim 7 (currently amended): A door handle device according to ~~any one of claim 2 to claim 6~~ claim 1, wherein the piezoelectric sensor is provided in an inside of the handle [main body].

Claim 8 (currently amended): A door handle device according to ~~any one of claim 2 to claim 6~~ claim 1, wherein the piezoelectric sensor is provided along an inner surface of the handle [main body].

Claim 9 (currently amended): A door handle device according to ~~any one of claim 2 to claim 6~~ claim 1, wherein the handle is arranged in a position that is hidden behind an outer surface of the door when the door locking means is shut and is exposed when the door locking means is opened.

Claim 10 (currently amended): A keyless entry system comprising:

the door handle device set forth in ~~any one of claim 1 to claim 9~~ claim 1;

a vehicle-side transmitter/receiver mounted on a vehicle side;

a mobile-side transmitter/receiver carried with an operator; and

a controlling portion for opening a door lock when the mobile-side transmitter/receiver receives a password request signal that the vehicle-side transmitter/receiver transmits and then the vehicle-side transmitter/receiver receives a password signal that the mobile-side transmitter/receiver transmits;

wherein the control portion includes

a password signal requesting means for receiving a sensed signal of the piezoelectric sensor to cause the vehicle-side transmitter/receiver to transmit the password request signal,

a password signal deciding means for deciding whether or not the password signal received by the vehicle-side transmitter/receiver and decrypted coincides with a normal signal set previously, and

a lock open instructing means for instructing the door locking means to open the lock when the password signal coincides with the normal signal.

Claim 11 (currently amended): A keyless entry system comprising:

the door handle device set forth in ~~any one of claim 1 to claim 9~~ claim 1;

wherein the control portion includes a password signal inputting means for receiving a touch detect signal from the piezoelectric sensor to standby an input of a password signal,

a password signal deciding means for deciding whether or not the password signal input into the password signal inputting means from the piezoelectric sensor and decrypted coincides with a normal signal set previously, and

a lock open instructing means for instructing the door locking means to open the lock when the password signal coincides with the normal signal.

Claim 12 (original): A keyless entry system according to claim 11, wherein the password signal is set based on a peak intensity and a peak interval of a vibration waveform generated by a rapping operation in a predetermined rhythm.

Claim 13 (original): A keyless entry system according to claim 11, wherein the password signal is set based on a peak intensity and a peak interval of a pressure change waveform generated by a variation of a gripping pressure.

Claim 14 (currently amended): A keyless entry system according to ~~claim 12 or claim 13~~ claim 11, further comprising:

a disturbance sensor for sensing signal components except a signal as a sensed object out of a sensed signal of the piezoelectric sensor.

Claim 15 (original): A door opening/closing device comprising:

an outer door handle and an inner door handle gripped in a door opening/closing operation;

a door locking means for locking a door not to be opened from a main body on which the door is closed;

a door latching means for latching the door releasably from the main body;

a door latch release operating means for releasing a latch of the door latching means in cooperation with an operation that is applied from an outer side or an inner side to open the door;

a door latch release signal sensing means for generating a signal in response to an operation of the door latch release operating means; and

a main body-side controlling means for controlling an open of the door locking means by a sensed signal of the door latch release signal sensing means.

Claim 16 (original): A door opening/closing device comprising:

an outer door handle and an inner door handle gripped in a door opening/closing operation;

a door locking means for locking a door not to be opened;

a door latching means for latching the door releasably from a main body;

a door latch release/set operating means for releasing and setting the door latching means in cooperation with an operation that is applied from an outer side or an inner side to open/close the door;

a door latch release/set signal sensing means for generating a signal in response to an operation of the door latch release/set operating means; and

a main body-side controlling means for controlling an open and a shut of the door locking means by a sensed signal of the door latch release/set signal sensing means.

Claim 17 (currently amended): A door opening/closing device according to claim 15 or ~~claim 16~~, wherein the door latch release signal sensing means or the door latch release/set signal sensing means senses solely a door opening operation or door opening/closing operation applied from an outer side or an inner side.

Claim 18 (currently amended): A door opening/closing device according to ~~any one of claim 15 to claim 17~~ claim 15, wherein the door latch release signal sensing means or the door latch release/set signal sensing means is provided to a position from which a signal is generated by an action of a common portion that cooperates with a door opening operation applied from an outer side or an inner side by the door latch release operating means or a door opening/closing operation applied from the outer side or the inner side by the door latch release/set operating means respectively.

Claim 19 (currently amended): A door opening/closing device according to ~~any one of claim 15 to claim 18~~ claim 15, wherein the door latch release signal sensing means or the door latch release/set signal sensing means is provided in an inside of a door.

Claim 20 (currently amended): A door opening/closing device according to ~~any one of claim 15 to claim 19~~ claim 15, wherein the door latch release signal sensing means or the door latch release/set signal sensing means is formed of a piezoelectric element material, and the piezoelectric element material is deformed by an action of the door latch release operating means or the door latch release/set operating means to output an electric signal.

Claim 21 (original): A door opening/closing device according to claim 20, wherein a bended portion to which a tension is applied is provided to the piezoelectric element material, and the bended portion is arranged to receive a deformation by an action of the door latch release operating means or the door latch release/set operating means.

Claim 22 (currently amended): A keyless entry system equipped with the door opening/closing device according to ~~any one of claim 15 to claim 21~~ claim 15, wherein the main body-side controlling means includes

a main-body transmitting/receiving means,
a password signal requesting means for receiving a sensed signal of the door latch release signal sensing means or the door latch release/set signal sensing means and then requesting a controlling means carried with a door opening/closing operator to transmit a password requesting signal via the main-body transmitting/receiving means,

a door opening/closing operator deciding means for deciding whether or not a password signal transmitted from the controlling means carried with the door opening/closing operator and decrypted coincides with a normal signal set previously, and

a lock open controlling means or a lock open/shut controlling means for controlling a open or open/shut of a door locking means when the password signal is normal.

Claim 23 (original): A vehicle door equipped with the keyless entry system set forth in claim 22.

Claim 24 (original): A building door equipped with the keyless entry system set forth in claim 22.

Claim 25 (new): A door opening/closing device according to claim 16, wherein the door latch release signal sensing means or the door latch release/set signal sensing means senses solely a door opening operation or door opening/closing operation applied from an outer side or an inner side.

Claim 26 (new): A door opening/closing device according to claim 16, wherein the door latch release signal sensing means or the door latch release/set signal sensing means is provided to a position from which a signal is generated by an action of a common portion that cooperates with a door opening operation applied from an outer side or an inner side by the door latch release operating means or a door opening/closing operation applied

from the outer side or the inner side by the door latch release/set operating means respectively.

Claim 27 (new) : A door opening/closing device according to claim 16, wherein the door latch release signal sensing means or the door latch release/set signal sensing means is provided in an inside of a door.

Claim 28 (new) : A door opening/closing device according to claim 16, wherein the door latch release signal sensing means or the door latch release/set signal sensing means is formed of a piezoelectric element material, and the piezoelectric element material is deformed by an action of the door latch release operating means or the door latch release/set operating means to output an electric signal.

Claim 29 (new) : A door opening/closing device according to claim 28, wherein a bended portion to which a tension is applied is provided to the piezoelectric element material, and the bended portion is arranged to receive a deformation by an action of the door latch release operating means or the door latch release/set operating means.

Claim 30 (new): A keyless entry system equipped with the door opening/closing device according to claim 16, wherein the main body-side controlling means includes a main-body transmitting/receiving means, a password signal requesting means for receiving a sensed signal of the door latch release signal sensing means or the door latch release/set signal sensing means and then requesting a controlling means carried with a door opening/closing operator to transmit a password requesting signal via the main-body transmitting/receiving means, a door opening/closing operator deciding means for deciding whether or not a password signal transmitted from the controlling means carried with the door opening/closing operator and decrypted coincides with a normal signal set previously, and a lock open controlling means or a lock open/shut controlling means for controlling a open or open/shut of a door locking means when the password signal is normal.

Claim 31 (new): A vehicle door equipped with the keyless entry system set forth in claim 30.

Claim 32 (new): A building door equipped with the keyless entry system set forth in claim 30.